

WHAT IS CLAIMED IS:

Sub A1
1. An electrophoretic display comprising a plurality of cells which are filled with an electrophoretic suspension and are sealed with a polymeric sealing layer, said display is driven by an energy field.

Sub B1
2. The display of Claim 1 wherein said electrophoretic composition comprises charged particles dispersed in a dielectric solvent or solvent mixture.

Sub A2
3. The display of Claim 1 wherein said energy field is an electric field.

Sub B1
4. The display of Claim 1 wherein said polymeric sealing layer is formed from a composition comprising a material selected from a group consisting of polyvalent acrylate or methacrylate, cyanoacrylates, polyvalent vinyl including vinylbenzene, vinylsilane, vinylether, polyvalent epoxide, polyvalent isocyanate, polyvalent allyl, and oligomers or polymers containing crosslinkable functional groups.

5. The display of Claim 4 wherein said composition for forming the polymeric sealing layer further comprises a polymer or oligomer.

Sub A3
6. The display of Claim 5 wherein said polymer or oligomer is soluble in said composition.

Sub B1
7. The display of Claim 4 wherein said composition further comprises an additive.

Sub A4
8. An electrophoretic display comprising:

- a) one top electrode plate and one bottom electrode plate, at least one of which is transparent; and

- b) a plurality of cells enclosed between the two electrodes, said cells which are filled with an electrophoretic suspension comprising charged particles dispersed in a dielectric solvent or solvent mixture and sealed with a polymeric sealing layer placed between said electrophoretic suspension and one of the electrode plates.

Sub B₁ 9. The display of Claim 8 in which the electrode plate with the sealing layer is the top electrode plate and is the viewing side, whereby both said top electrode plate and sealing layer are transparent.

Sub A₅ 10. The display of Claim 9 further comprising an adhesive layer between the sealing layer and top electrode plate.

11. The display of Claim 8 wherein said sealing layer is a polymeric layer.

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Sub A₆ 12. The display of Claim 11 wherein said polymeric sealing layer is formed from a material selected from a group consisting of polyvalent acrylate or methacrylate, cyanoacrylates, polyvalent vinyl including vinylbenzene, vinylsilane, vinylether, polyvalent epoxide, polyvalent isocyanate, polyvalent allyl, and oligomers or polymers containing crosslinkable functional groups.

13. The display of Claim 10 wherein said adhesive layer is a pressure sensitive adhesive, a hot melt adhesive, a heat, moisture or radiation curable adhesive.

Sub B₃ 14. The display of Claim 10 wherein said sealing and adhesive layers are formed from different materials.

sub B3
15. The display of Claim 10 wherein said sealing and adhesive layers are formed from the same material.

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21. The display of Claim 16 wherein said material is a radiation curable material.

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24. The display of Claim 8 in which the bottom electrode plate on the opposite side of the sealing layer is the viewing side, whereby said bottom electrode plate is transparent.

sub A7
18. The display of Claim 17 further comprising an adhesive layer between the sealing layer and the top electrode plate.

19. The display of Claim 18 wherein said adhesive layer is a pressure sensitive adhesive, a hot melt adhesive, a heat, moisture or radiation curable adhesive.

Sub B5
20. The display of Claim 18 wherein said sealing and adhesive layers are formed from different materials.

21. The display of Claim 18 wherein said sealing and adhesive layers are formed from the same material.

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22. The display of Claim 21 wherein said material is a radiation curable material.

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23. A process for manufacturing an electrophoretic display comprising imagewise exposure through a photomask which moves at the same speed as a web substrate.

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24. The process of Claim 23 wherein said web substrate comprises a conductor layer on a plastic substrate in which said conductor layer is coated with a radiation sensitive material.

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25. The process of Claim 23 wherein said conductor layer is ITO.

26. A process for manufacturing an electrophoretic display comprising the steps of:

a) filling the cells with an electrophoretic composition comprising charged particles dispersed in a dielectric solvent or solvent mixture and a dispersion of a sealing composition which has a specific gravity lower than that of said dielectric solvent or solvent mixture; and

b) forming a sealing layer above the dielectric solvent or solvent mixture by solvent evaporation.

27. The process of Claim 26 wherein the sealing layer is further cured by radiation, heat, moisture or oxidation during or after solvent evaporation.

28. A process for manufacturing an electrophoretic display comprising the steps of:

a) filling the cells with an electrophoretic composition comprising charged particles dispersed in a dielectric solvent or solvent mixture;

b) overcoating onto said electrophoretic composition a sealing composition which is at least partially immiscible with said dielectric solvent or solvent mixture and has a specific gravity lower than said dielectric solvent or solvent mixture; and

c) sealing said cells by solvent evaporation.

29. The process of Claim 28 wherein the sealing layer is further cured by radiation, heat, moisture or oxidation during or after solvent evaporation.

30. An electrophoretic display which comprises:

a) first and second electrode plates;

b) an array of cells enclosed between the two electrode plates, each of said cells is filled with an electrophoretic composition comprising charged particles dispersed in a dielectric solvent or solvent mixture and is individually sealed by a sealing layer;

c) an adhesive layer between said first electrode plate and said sealing layer; and

d) a polymeric layer between said electrophoretic composition and said second electrode plate.

31. The display of Claim 30 wherein said polymeric layer between the electrophoretic composition and the second electrode plate is formed of the same composition as the material constituting the cells.

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a8
add
B12